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# THE SCIENTIFIC MONTHLY

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PAPERS PRESENTED BEFORE THE SECTION  
OF SOCIAL AND ECONOMIC SCIENCE OF  
THE AMERICAN ASSOCIATION FOR  
THE ADVANCEMENT OF  
SCIENCE<sup>1</sup>

## FRANCE AFTER THE WAR

By the Honorable EDOUARD DE BILLY

FRENCH HIGH COMMISSION

### I

**I**N order to discover what a man will be in the future, it is necessary to investigate first what this man has been in the past. Then, a study of the new environment in which he stands may enable one to determine, with sufficient accuracy, how he may develop.

The same method applies to peoples. I have been asked to address you on "France after the War." And I feel very deeply the responsibility which lies on me in discussing such a question before a body as representative and competent as the American Association for the Advancement of Science.

May I venture to answer your request by trying, in a few words, first to summarize what, from the point of view of the scholar in economic sciences, France has been in the immediate past, and, second, to give you some data which will allow you to realize in what circumstances she stands when, at the close of these fifty-one months of war, she has to face the problems of reconstruction, and that of restarting her economic, industrial and commercial life.

<sup>1</sup> Baltimore meeting, December, 1918, arranged by the Secretary of the Section, Seymour C. Loomis.

## II

In this country, everything changes so rapidly, and the growth has been so enormous, that most of the activity and attention are focused on present problems, and there is in many minds some forgetfulness of the past. Moreover, the energies of most of the citizens have been, justly, so devoted to the development of their own country that they have given, until these last few years, but little attention to the activities of other nations on the other side of the water. The consequence is that many Americans do not realize what was the position of France in the middle of the nineteenth century; and many of you who are now listening to me will, I am sure, be rather skeptical if I tell you that, during this period, France was one of the most enterprising nations of the world, and developed, in the economic field, the same spirit of self-confidence and audacity that her preceding generation had shown to the world on the battlefields, during the Napoleonic wars.

Yet this is the plain truth. During the years from 1850 to 1870, which was the period of the first development of railroads, French engineers were not content with constructing the railway systems of their own country. In Austria, in Italy, in Spain, railways were built by French engineers, with French capital. This was also done, a little later, in Russia. Harbors and great public works were also contracted for and built by French firms, led by French engineers.

The Suez Canal was, I think, the greatest French success of that period. It was planned by a great Frenchman, who found, with the help of the French government, French capital to subscribe to the company, and French contractors and French engineers to do the work. May I add that, in this development of French industrial life, the part taken by Alsace and the Alsatians was most prominent.

The war of 1870-71 was, for my country, the greatest blow she had ever received. We were, perhaps, at that time, too proud of our achievements. The fact is that the defeat not only deprived us of two provinces which were as much a part of France as any other French land; in addition, it destroyed, in the minds of those who had been defeated, the spirit of self-confidence, which is as necessary to any human enterprise as is fire to make an engine work.

The recovery of France after this disaster was rapid. I may say that it amazed the world. It angered Bismarck, who thought he had annihilated France forever, and who, had it not been for the personal intervention of Queen Victoria, would

have attacked her again in 1875, to crush her to death. But we recovered with the timorous minds of men who, in the course of a successful development, have undergone an unforeseen and terrible disaster. The Frenchmen whom you have known during the last forty years were the sons of men who had been badly defeated. They bore on their shoulders a burden which prevented them from marching lightly to success.

However, two new fields of activity were gradually opened to our generation: one inside our country, the other in far distant fields.

The German negotiators, in 1871, had fixed the boundary so as to annex to Germany all that was then known of the iron deposits of Lorraine. The geologists of that time had a theory that only the outcrops of these enormous layers had a sufficient percentage of iron to be of any industrial use; and these outcrops became German. After a few years, French engineers started a series of borings which showed that, to a greater depth than had been realized, the deposits yielded ore of good workable quality. This was the origin of the development of our iron industry in the east of France. While the production of pig iron in France was 960,000 tons in 1890, it had reached 5,311,000 tons in 1913; and the output of iron ore had reached 23,300,000 tons. This was a success which did not fail to produce its fruit. When the war broke out in 1914, two regions in France—the north, thanks to the coal basin, and the east, thanks to the iron—had been for several years developing in a remarkable manner, new works and factories being built, and a new generation arising, believing in its own possibilities and success.

Some of these young men, anxious to find a wider field of development, had gone to unknown lands, and there they met with greater success and attained a greater sense of self-confidence. Bismarck, who did not care for colonies for himself and only wanted to protect and develop the empire which he had built, thought it very wise to encourage France to enter upon a colonial policy. He was sure it would weaken her, and that besides it would divert her thoughts from her eastern frontier, which Germany wanted to make, on her own side, so utterly impregnable that France would never dream of touching it.

Very wise was Bismarck indeed, but for the benefit of France, and not for that of Germany. The French who went to Indo-China, to Madagascar, to Congo, to Tunis, to Morocco, rapidly discovered, in these new countries, that their endeavors

were crowned with success; their energies were exalted, while trade and agriculture developed. They also learned to fight, to subdue dangerous rebellions, and (which has been their most remarkable achievement) they succeeded in making loyal to France, by good administration, those whom they had been obliged to fight. Thus these colonies, instead of weakening France, have been to her a source of moral, economic and military strength. As has been said of Morocco, the colonies have been the anvil on which France forged her sword.

Such was the situation, improving rapidly during the preceding few years, when the war broke out, and found France ready to meet all emergencies.

Next to the military problem, the industrial problem has been, during the last four and a half years, the most difficult to attend to. Our country, deprived of its coal- and iron-producing districts, having almost no further raw materials of its own, and most of its big factories and iron works in the hands of the enemy, had to meet the most extravagant demand for guns, ammunition, powder, explosives, and all sorts of war material. You know what has been achieved. You know to what extent new factories have been erected and equipped, every step being taken in order to make use of the supplies of coal and steel delivered by Great Britain, and of steel, machinery and supplies of every kind sent to France by the United States.

A few figures will illustrate the results obtained. In 1916, the output of our war factories in 75 cm. caliber shells, was 13,000. In 1917, we were able to manufacture 200,000 rounds per day, besides 100,000 rounds of heavier caliber. The monthly production of sulphuric acid, which previous to the war did not amount to 5,400 tons a month, amounted, before the end of the war, to nearly 100,000 tons. The equipment of our factories was such that besides our own needs in guns and air planes, we were able to furnish them to the armies that were fighting with us. General Pershing's report shows to what extent the American divisions were equipped along these lines with material manufactured in French factories by French workmen, from raw materials coming from the United States, using coal received from Great Britain.

This could not have been achieved if the French nation had not been, in August, 1914, in a quite different spirit from that indicated by the figures of her trade during the twenty previous years. Victory will give the development which was already noticeable, a definite and powerful start. In the joy of this

immense success, the clouds of the defeat of years gone by will be, as it were, scattered by a healthy breeze. Self-confidence, which was growing slowly, will be exalted, and the rising generation of France will appear with the same spirit of enterprise that animated their grandfathers of the eighteen-sixties. They will need it, for the problem they have to face is most difficult.

### III

It has often been said, and it is true, that France will have gained much by this war. She has recovered the two provinces which she lost in 1871, which means that the number of French people is increased by nearly two million men and women of solid character and absolute devotedness. They have shown this by their stubborn opposition, during forty-four years, to their annexation to Germany. They are people also of sound intelligence and good business-like qualities, as you may judge from those Alsatians who, having emigrated to this country and become naturalized Americans, have prospered so well.

The regaining of these provinces also means the recovery of the good agricultural land of the plains between the Vosges and the Rhine, and the addition to the mineral resources of France of the iron deposits of the Germany-annexed portion of Lorraine, and of the potash deposits lately discovered in upper Alsace.

May I add that this victory also means for us the safety of our eastern frontier, the removal of the danger which, to a certain extent, handicapped the development of our industry in that region, because we knew that the Germans were anxious to invade our frontier territories in order to make theirs, as they had hoped to do in 1871, the whole of our iron deposits.

These are precious assets. But, on the other hand, let us consider some of the terrible aspects of the situation in which now finds itself the country that, for four and a half years, has been the battlefield of our coalition. Your war, and England's war, as well as France's war, have been fought in Belgium and in France. Our army had to stand the first rush of the invasion, while the other armies were being prepared. And, however wonderful was the effort of the British, some months later, and afterward that of the American army, the front held by the French has never been less than two thirds of the total line from the North Sea to the Swiss border. Thus our losses were greater than those of any other army. A part of our country has been invaded, its population treated as slaves, their

houses looted, their factories destroyed; while on the fighting line the soil of France has been plowed so deep by shells that no agriculture is possible. Some sentimental people have been lamenting over France as bled white. Nonsense! France is not bled white. She has men filled with renewed and splendid energy. But here she stands, facing the problem of recuperating her place in the economic markets of the world, with a part of her industrial and agricultural power destroyed, and with her men killed and maimed to a number that exceeds imagination. May I give you some figures on these subjects?

Our *losses in men*, as you know, have been tremendous. Besides 1,300,000 of our young men who were killed or died of wounds or illness in this war, we have a great number whose physical ability has been seriously impaired. Add to these the number of our prisoners who came back in such a terrible physical condition as to render them unfit for any sustained effort, and we come to a total loss, for the work to be started in France, of about two and a half million men, who were mostly among the youngest, ablest and strongest, as well as the most spirited, of our people—a terrible loss for a country of less than forty million inhabitants.

Our *agriculture* has perhaps suffered more heavily if possible than any other branch of our economic activity.

The following figures will give you a vivid picture of the losses sustained.

	July, 1914,	March, 1918,
Cattle .....	14,788,000 Head	12,443,000 Head
Sheep .....	16,213,000	10,587,000
Pigs .....	7,048,000	4,200,000
Horses .....	3,231,000	2,283,000
Total .....	41,280,000	29,513,000

The difference between the two totals, 11,767,000 heads, represents the loss of France during the war.

The number of *cattle*, which in England increased by 4 per cent., has in France decreased by 18 per cent. The production of *milk* has decreased by 63 per cent. The number of sheep has decreased in France by 38 per cent. The number of pigs has decreased by 40 per cent. May I, in addition to these figures, mention that, as regards crops, the soil of France is also in an impoverished condition, having been, for four years, mostly tilled by very young and elderly men, below or above the age of military service, and by women, whose physical strength was not equal to the splendid spirit they have shown in this war.

As regards *industry*, you will realize the terrible blow the

war has given to that part of the economic life of France when you know that there were 26,000 mills or factories in that portion of our territory occupied by the Germans, and that most of them have been destroyed or stripped of all their machinery. The invaded districts do not comprise more than 7 per cent. of the whole territory of France, but they represented 30 per cent. of the industrial output of our country, and 25 per cent. of the total returns of taxes. From these districts came 90 per cent. of our iron ore; 83 per cent. of our pig iron, as 95 blast furnaces, out of a total of 127, were in the invaded regions; 75 per cent. of our steel; 70 per cent. of our coal; 94 per cent. of our combed wool; 90 per cent. of our flax; 65 per cent. of our sugar.

The part of France occupied by the Germans produced four fifths of our woollens, and included 80 per cent. of our weaving industry. During the four years of their occupation, the Germans wilfully and methodically destroyed all that was in their power to destroy. They not only requisitioned as at Roubaix and Tourcoing, where they commandeered stocks of wool worth 300 million francs. Requisition is one of the rights of war, and of that we can not complain. But what is against all right, and against all international law and agreement, is the destruction and stealing of property; and this is what the Germans did.

As to our cotton industry in the north, the German invasion has cost us 2,100,000 spindles and 13,200 looms, and in the east, 125,000 spindles and 6,905 looms. This robbery was not carried on in cotton and wool factories alone. Iron works, machine works also, were looted, the useful equipment, engines, rolling mills, machine tools, even structural steel, having been methodically taken away and set to work again in the iron works in Germany. Mines were flooded, the surface plants dynamited, the workmen's dwellings destroyed.

In a word, the Germans did their best to annihilate the power of industrial production in the invaded districts and prevent these regions from resuming, for many years to come, their place in the market of the world.

The industry of transportation has also heavily suffered from the war. The wear and tear on the rolling stock of our railroads has been intense. In the invaded regions, the tracks were badly injured during the German retirement.

As to our *shipping*, the tonnage of our merchant marine in 1914 amounted to 2,285,728 tons. We have lost 757,900 tons



through the submarine or other warfare, and 115,000 tons through sea accidents.

Contrary to what has happened in other more fortunate countries, France during the war had neither the labor nor the raw materials to build new ships. The machine shops of our shipyards were used to manufacture ammunition, tanks and other war material; you can draw your own conclusion. We have thus lost 872,000 tons. Taking into account the small amount of 117,000 tons built during the war and a few ships which we have been able to buy, our tonnage had fallen to 1,615,000 tons on April 1, 1918.

Our *commerce* too has suffered most heavily, practically all of our factories being turned to war work, and all our peacetime industries being at a standstill.

Here are the figures for 1913, before the war:

Imports	Exports
Francs. 8,421,300,000	Francs. 6,880,200,000

which compare with the figures for the year 1917:

Imports	Exports
Francs. 16,311,975,000	Francs. 4,095,000,000

And last, let us have a glance at the financial situation of the country.

The war will have cost France, up to December 31, 1918, 130 billion francs, this figure being the total of appropriations granted by the French Parliament for military and exceptional expenses during the war.

If you add to this 11 billion for normal expenses, and 17 billion for interest on the public debt, you see that France has, during those 53 months, spent 158 billion francs.

To meet these expenses, France had taxes and loans. Taxes have been raised to an unprecedented level. While in 1914 the total of our national budget was slightly above four billion francs, the taxes will have given in 1918, without the invaded regions, which were, as you know, by far the richest, over nine billion francs. In 1917, the civilian population in France paid in taxes 38 dollars per capita, as compared with nine dollars paid in 1906 by Americans.

France, before the war, had a public debt of thirty-four billion francs. The interior debt has increased, during the war, by over 100 billions, the last public loan having produced 27 billions. We have received from Great Britain and the United States, loans amounting to 25 billion francs.

So that France starts on this new period of her history with a burden of public debt increased, on account of the war, by over 125 billion francs, a figure which will certainly be further increased in order to liquidate the war expenses.

I had to give you these figures in order to make you realize the seriousness of the situation in which France stands. We are all ready to face our problems with the utmost confidence and will to succeed. But we are aware that they are grave problems.

First, while the whole world jumps into peace work and resumes trade, we have a part of our territory which is unable to produce. We can not maintain our place in the markets of the world. We can not get our own supply of coal. We are obliged to maintain restrictions in order to protect our industry while in course of rehabilitation, and as long as a normal order of things is not reestablished.

Secondly, in order to get from outside markets the raw materials and finished products we need, we depend largely upon foreign ships.

Thirdly, trade and shipping are closely connected. We have to rebuild our foreign trade, which has been stopped during the war on account of lack of tonnage and lack of industrial production. In order to start again, we need ships, and our commercial fleet is reduced to the figures I quoted to you a while ago.

Fourthly, one of our best assets is our colonial empire. We have pacified and established our rule in vast countries, whose natural supplies are enormous, and whose populations are willing to work, and are loyal, as they have shown by giving us a total contribution of 918,000 men during the war, of which 680,000 were fighters, and 238,000 workmen in our war factories. With her possessions, France is actually the fourth of the great countries of the world as regards territory, the fifth as regards population. But we must develop these possessions. In order to perform that duty, we want ships. And again, our merchant fleet has fallen to almost nothing.

So, in order to fulfill her duties, France has two great objects to achieve: to rehabilitate her devastated regions, and to build ships. If her friends want to help her during peace as they have helped her during the war, they have two means of assisting her to regain rapidly, from an economic point of view, her place in the society of nations: helping her to rebuild what has been destroyed by the Germans, and helping her to construct, or to purchase, ships.